

CLAIMS

1. A method for manufacturing a quasi-phase matched quartz crystal comprising a step in which a quartz crystal on which surface step working has been performed so that this quartz crystal has protruding parts consisting of a periodic or arbitrary pattern is subjected to the application of pressure by pressing a planar substrate at a specified temperature, thus inverting the crystal axes in the portions corresponding to the protruding parts, this quasi-phase matched quartz crystal manufacturing method being characterized in that the protruding parts consisting of a periodic or arbitrary pattern are composed of aggregates of protruding parts of an even finer pattern.

2. A method for manufacturing a quasi-phase matched quartz crystal comprising a step in which a quartz crystal substrate whose surface has been polished to a flat surface is subjected to the application of pressure by being pressed at a specified temperature by a surface that has been subjected to surface step working so that this surface has protruding parts consisting of a periodic or arbitrary pattern, thus inverting the crystal axes of the portions of the quartz crystal that correspond to the protruding parts, this quasi-phase matched quartz crystal manufacturing method being characterized in that the protruding parts consisting of the periodic or arbitrary pattern are composed of aggregates of protruding parts of an even finer pattern.

3. The method for manufacturing a quasi-phase matched quartz crystal according to Claim 1 or Claim 2, which is characterized in that the shape of the protruding parts of the even finer pattern is a square shape or rectangular shape.

4. The method for manufacturing a quasi-phase matched quartz crystal according to Claim 1 or Claim 2, which is characterized in that the shape of the protruding parts of the even finer pattern is a hexagonal shape.

5. The method for manufacturing a quasi-phase matched quartz crystal according to any one of Claims 1 through 4, which is characterized in that the ends of the periodic pattern are formed with a shape that conforms to the twin boundaries of the quartz crystal.

6. A quasi-phase matched quartz crystal which is characterized in that surface step working is performed on the surface of one side so that this surface has protruding parts consisting of a periodic or arbitrary pattern, and the protruding parts consisting of this periodic or arbitrary pattern are composed of aggregates of protruding parts of an even finer pattern.